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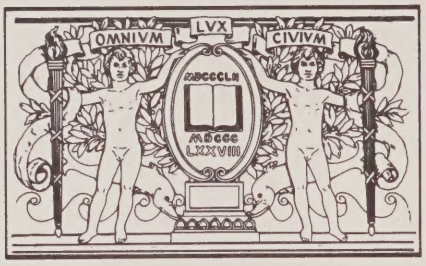

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Results of the 1985 Household Survey

VI. Health Insurance and Medicaid Coverage

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Health Insurance and Medical Coverage

Results for Boston Neighborhoods

From the 1985 Household Survey

Jeffrey Brown
with the Assistance of Kunil Bae

Research Department
Boston Redevelopment Authority

January, 1987

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SUMMARY

A survey of households in Boston in 1985 provided information on whether or not household members were covered by private health insurance or publicly-funded health insurance programs. The purpose of this report is to identify the characteristics of Boston residents that are the most closely related to health insurance coverage. Such information should aid public health administrators in identifying and serving the residents who are least likely to have health insurance coverage. Health insurance is an essential element of personal health care in a modern, urban community. Without health insurance, a person risks having insufficient preventive and curative health care and insurmountable debt to health providers.

In Boston, 14 percent of the residents had neither private health insurance nor publicly-provided Medicaid or Medicare. This extent of coverage was about the same as estimates for Massachusetts and the United States. See Table 1A. Analysis of the BRA/NDEA's household survey indicated that the typical Boston resident who was not insured was a young adult with low income who was employed in construction, food or textile manufacturing, wholesale trade, entertainment services or groceries/restaurants, or was seeking a job. The neighborhood of North Dorchester, Roxbury, Mattapan and Jamaica Plain had larger proportions of such people than other areas of Boston.

The characteristics that were the most closely related to health insurance were a person's industry of work, income, age and occupation. Race and ethnicity, English proficiency and educational attainment are of secondary importance.

Medicaid is public health insurance for low-income persons. In Boston, Medicaid coverage was most closely related to age and race and ethnicity.

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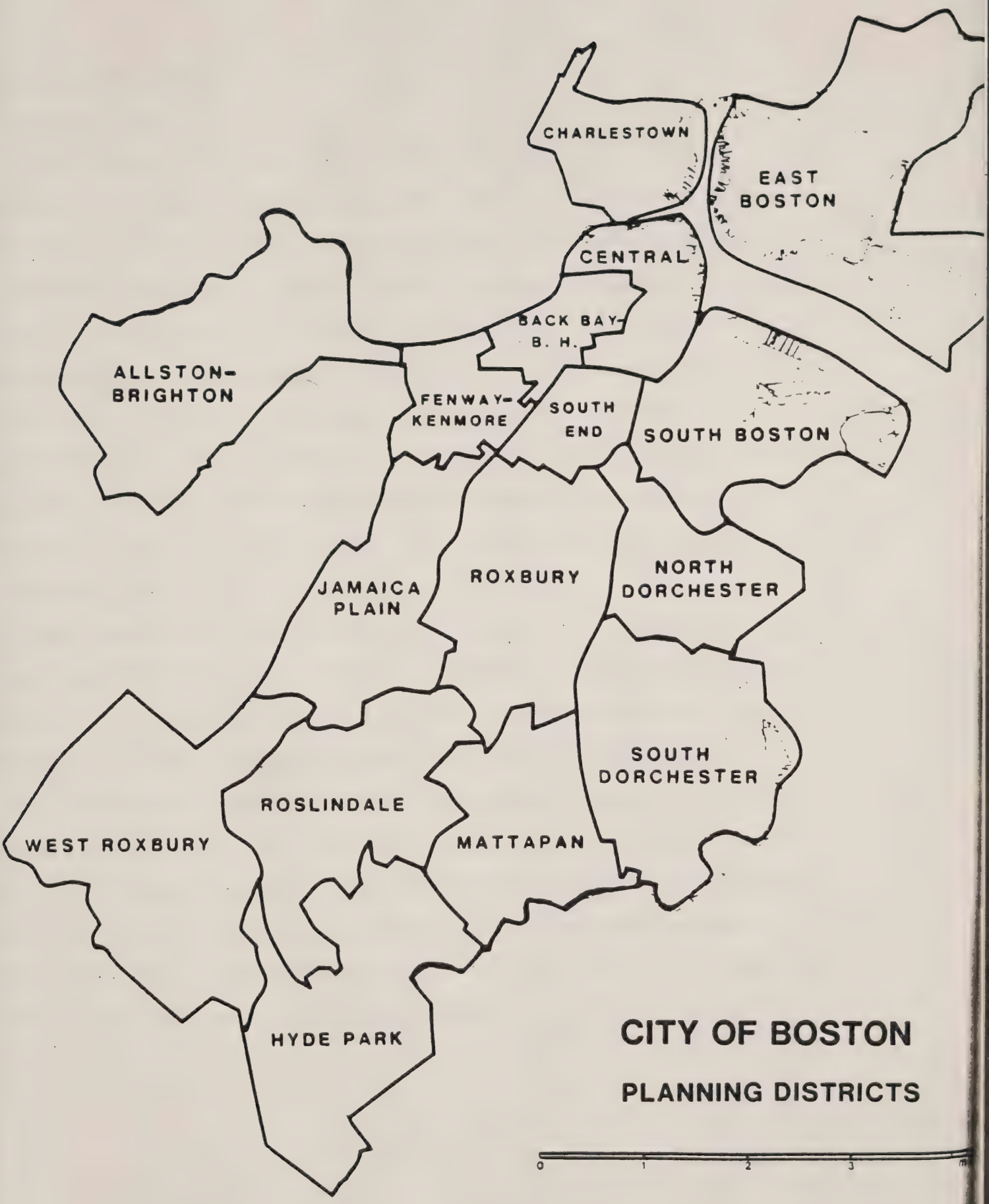

CITY OF BOSTON

PLANNING DISTRICTS

BOSTON REDEVELOPMENT AUTHORITY

Health Insurance Coverage

Neighborhoods

Health insurance coverage, private and public, varied markedly by neighborhood of residence in Boston in 1985. City-wide, 86 percent of the population had health insurance. In the downtown area, Charlestown and the southern-most neighborhoods, health coverage was the most extensive. Between 90 and 93 percent of the residents had health insurance. See Table 1. In contrast, about one out of every five residents in North Dorchester, Roxbury, Mattapan and Jamaica Plain lacked health insurance. The remaining neighborhoods were close to the Boston average. Variation in economic status, age, race, and other characteristics among neighborhoods explains the differences in the extent of coverage. These will be discussed further.

Age and Sex

Young adults, ages 19 through 24, and children, ages 5 through 14, had below-average health insurance coverage. See Table 2. These two age groups encompass school children in grades 1 through 8, college students and other young adults. Health insurance incidence was highest for the elderly, 97 percent; middle-aged persons, 90 percent; and infants, 89 percent. Females in the child-bearing years, 15-44, were more likely to have health insurance than males in the same age category. These findings are consistent with the notion that infants, mothers and elderly residents are the best covered segments of Boston's population. Public assistance, in the form of Medicare and Medicaid, primarily serves those segments of the population.

TABLE 1: PROPORTION OF BOSTON RESIDENTS WITH HEALTH INSURANCE, BY NEIGHBORHOOD, 1985 /1

(IN PERCENT)

Neighborhood	Insured	Uninsured	Total
East Boston	83	17	100
Charlestown	92	8	100
South Boston	86	14	100
Central	91	9	100
Back Bay/Beacon Hill	90	10	100
South End	84	16	100
Fenway/Kenmore	82	18	100
Allston/Brighton	88	12	100
Jamaica Plain	81	19	100
Roxbury	80	20	100
North Dorchester	79	21	100
South Dorchester	84	16	100
Mattapan	82	19	100
Roslindale	92	8	100
West Roxbury	93	7	100
Hyde Park	93	7	100
BOSTON	86	14	100

Based on 3,117 observations (weighted).

TABLE 1A. PROPORTION OF RESIDENTS UNDER 65 YEARS OF AGE WITH HEALTH INSURANCE COVERAGE

(IN PERCENT)

	Insured	Uninsured	Total
City of Boston /1	84	16	100
Massachusetts /2	88	12	100
United States /2	83	17	100

Sources:

1/ Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, March 1985.

2/ Annual Demographic Files, 1984 Current Population Survey; Estimates generated by the Urban Institute.

JPB 1.22.87

TABLE 2: PERSONS WITH HEALTH INSURANCE IN BOSTON BY AGE AND SEX, 1985 (IN PERCENT)

	Male		Female	
Age	Insured	Uninsured	Insured	Uninsured
0-4	89	11	91	9
5-14	80	20	84	16
15-18	82	18	90	10
19-24	77	23	82	18
25-44	82	18	86	14
45-54	91	9	88	12
55-64	92	8	89	11
65+	97	3	97	3
TOTAL	84	16	87	13
Under 65	82	18	86	14

Based on 1,462 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. jpb.1.22.87

Income and Labor Force Status

Health insurance coverage was below average for persons with incomes below $15,000 per year, as shown in Table 3. For persons with incomes above $15,000, the incidence of health insurance rose with income. Coverage was nearly complete above $20,000. Although income responses in a sample survey are typically error-prone, we are inclined to accept the results of the BRA survey which indicate a strong relationship between income and health insurance. Health insurance coverage is closely related to poverty status: 89 percent of the persons above poverty had coverage while only 75 percent of persons in poverty had coverage. Apparently, public programs were not reaching all of the poverty population. See Table 4.

In addition, income is related to other factors such as labor force status. Notably, only six of every ten of the unemployed persons had health insurance, as shown in Table 5. Employed persons and persons not in the labor force were covered to about the same extent, 84-86 percent, suggesting that a job was not an overriding determinant of health insurance coverage, but that persons who were looking for work were less likely to have coverage. Among uninsured Boston residents ages 19-64, 63 percent were employed and 12 percent were unemployed. State uninsured residents had about the same labor force status. See Table 5A.

Occupation and Industry of Work

For employed persons 16 years and older, health insurance coverage was related to type of occupation. See Table 6. Professional/managerial/ technical and secretarial/office support workers had above-average coverage, while crafts/mechanical, laborers, cleaning/food services workers and health services workers were well below the average for all occupations. These latter occupations often have relatively low pay levels, high job turnover, or

TABLE 3: BOSTON RESIDENTS 16 YEARS AND OLDER, BY HEALTH INSURANCE STATUS, BY INCOME, 1985 (IN PERCENT)

Income ($)	Insured	Uninsured	Total
0-4999	79	21	100
5000-9999	77	23	100
10000-14999	83	17	100
15000-19999	92	8	100
20000-24999	97	3	100
25000-29999	95	5	100
30000-34999	99	1	100
35000-49999	98	2	100
50000+	100	*	100
Total	86	14	100

* Less than 0.5 percent.
Based on 1,573 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.04.02.86

TABLE 4: BOSTON RESIDENTS BY HEALTH INSURANCE COVERAGE BY POVERTY STATUS, 1985 (IN PERCENT)

Poverty Status	Insured	Uninsured	Total
In Poverty	75	25	100
Above Poverty	89	11	100
All Persons	86	14	100

Based on 2,709 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. KB.04.17.86

TABLE 5: BOSTON RESIDENTS, AGES 16 THROUGH 64, BY HEALTH INSURANCE STATUS, BY LABOR FORCE STATUS,

(IN PERCENT)

Labor Force Status	Insured	Uninsured	Total
Not in Labor Force	84	16	100
Employed	86	14	100
Unemployed	59	41	100
Total	84	16	100

Based on 2,928 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. jpb.1.22.87

TABLE 5A. LABOR FORCE STATUS OF UNINSURED POPULATION AGES 19- IN BOSTON AND MASSACHUSETTS

(IN PERCENT)

Labor Force Status	Boston/1	Massachusetts/2
Not in Labor Force	25	30
Employed	63	57
Unemployed	12	14
Total	100	100

Based on 2,285 observations (weighted).

Sources:

1/ Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, March 1985.

2/ Department of Urban and Environmental Policy Tufts University, "Boston at Risk," The Boston Foundation, September 1985, p. 42.

JPB 1.22.87

TABLE 6: EMPLOYED PERSONS 16 YEARS AND OLDER, LIVING IN BOSTON, BY HEALTH INSURANCE STATUS AND OCCUPATION, 1985
(PERCENT)

Occupation	Insured	Uninsured	Total
Professional/Managerial/ Technical	92	8	100
Sales	87	14	100
Secretarial	88	13	100
Office Support	88	13	100
Crafts/Mechanical	76	24	100
Operatives	80	20	100
Laborers	79	21	100
Cleaning/Food Services	75	25	100
Health Services	80	20	100
Miscellaneous Services	82	18	100
All Occupations	86	14	100

Based on 1,744 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.04.02.86

seasonal work. Compared to workers in professional and other office-related occupations, these production and service workers are more likely to have no work-related coverage or have difficulty in affording or sustaining private health insurance. For example, a year-round employee in Boston City Hall with access to a group health insurance plan would likely have health insurance coverage; a seasonal retail employee who works a few months at a time for any one employer, or a kitchen worker in a restaurant would be less likely to have health insurance coverage.

In a similar pattern, health insurance coverage differed by industry of work, as shown in Table 7. Health insurance incidence was highest in government but was also high in finance/insurance/real estate and "other manufacturing," dominated by printing and publishing. The lowest percentages were found among workers in food/textile manufacturing, construction, wholesale trade, groceries/restaurants and entertainment services. With the exception of restaurants, these are slower-growing or declining industries in Boston. The faster-growing industries, primarily business and professional services and finance, had better-than-average health insurance coverage.

Race/Ethnicity and Educational Attainment

Bostonians of non-white races and ethnic groups had below-average health insurance coverage. See Table 8. In fact, one out of every four Hispanic and Asian residents had no health insurance. Blacks, with 82 percent coverage, were closer to the Boston average of 85 percent.

Educational attainment appeared to be related to incidence of health insurance. In particular, an adult, 25 years or older, with a high school diploma, a college degree or graduate education was more likely to have health insurance than an adult person with less than a high school education or a person who had completed one to three years of college. See Table 9.

TABLE 7: EMPLOYED BOSTON RESIDENTS 16 YEARS AND OLDER WITH HEALTH INSURANCE, BY INDUSTRY OF WORK, 1985 (IN PERCENT)

Industry	Insured	Uninsured	Total
Construction	73	27	100
Food/Textile Products	67	33	100
Other Manufacturing	92	8	100
Transportation/pub.Util.	88	12	100
Wholesale Trade	74	26	100
Groceries/Restaurants	76	24	100
Other Retail Trade	83	17	100
Finance/Ins./Real Estate	91	9	100
Business/Repair Services	80	20	100
Entertainment	76	24	100
Professional Services	89	11	100
Other Services	84	16	100
Government	93	7	100
All Industries	86	14	100

Based on 1,768 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB 1.22.87

TABLE 8: PERSONS WITH HEALTH INSURANCE IN BOSTON BY RACE AND ETHNIC ORIGIN, 1985

(IN PERCENT)

Race and Ethnic Origin	Insured	Uninsured	Total
Black	82	18	100
Asian	74	26	100
Hispanic	74	26	100
White, not Hispanic	89	11	100
Other	77	23	100
Total	85	15	100

Based on 3,088 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. jpb.10.20.86

TABLE 9: PERSONS 25 YEARS AND OLDER IN BOSTON, BY HEALTH INSURANCE STATUS BY EDUCATION, 1985

(IN PERCENT)

Highest Grade of School Completed	Insured	Uninsured	Total
Grade 8 or less	83	17	100
Grade 9-11	82	18	100
High School Graduate	89	11	100
College, 1-3 years	83	17	100
College Graduate	91	9	100
Graduate Education	92	8	100
Total	87	13	100

Based on 1,867 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. jpb.10.20.86

Household Composition

Health insurance coverage varied by household composition. A person in a couple without children was the most likely to have health insurance coverage. See Table 10. When households are separated by poverty status, as in Table 11, the type of household appears to be less of a determining factor in health insurance coverage. Persons in households above poverty had average or above-average insurance coverage for a variety of household types. Notably, nearly 60 percent of the persons who were in a "couple" or a "couple with child(ren)" household in poverty had no health insurance. Yet, persons in single-parent households had average coverage. Thus suggests that the public health insurance programs better cover single-parent households in poverty than couples in poverty.

English Language Proficiency

Boston residents who did not have proficiency with the English language were much less likely to have health insurance than those who could speak English. In fact, one out of every three persons who did not speak English had no health insurance. See Table 12.

Work Disability and Student Status

Neither work disability nor student status had any apparent relationship to health insurance coverage. See Tables 13 and 14. Income and other factors would explain variation in health insurance coverage better than whether or not a person were disabled and unable to work or a student.

Statistical Significance of Results

The cross tabulations in Tables 1-14 are statistically significant according to the Chi Square test. Strictly, in each case, the hypothesis that no statistical relationship existed between the cross-tabulated variables was rejected with a 95 percent confidence level. Because the Chi Square test does not indicate strength of relationships, an additional statistic, in this case, the uncertainty coefficient, is necessary.

TABLE 10. RESIDENTS OF BOSTON BY HEALTH INSURANCE STATUS, BY HOUSEHOLD COMPOSITION, 1985

(IN PERCENT)

Household Composition	Insured	Uninsured	Total
Single person	88	12	100
Couple	93	7	100
Couple with child(ren)	85	15	100
Parent with child(ren)	85	15	100
Two or more unrelated persons	84	16	100
All household types	86	14	100

Based on 3,115 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. jpb.1.22.87

TABLE 11: BOSTON RESIDENTS WITH HEALTH INSURANCE BY POVERTY STATUS BY HOUSEHOLD COMPOSITION, 1985 (IN PERCENT)

Household Type	In Poverty		Above Poverty	
	Insured	Uninsured	Insured	Uninsured
Single person	78	22	90	10
Couple	60	40	95	5
Couple with child(ren)			90	10
Parent with child(ren)	86	14	84	16
Total	76	24	89	11

Based on 2,482 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB 1.22.87

TABLE 12: PERSONS IN BOSTON WITH HEALTH INSURANCE BY ENGLISH LANGUAGE PROFICIENCY, 1985

(IN PERCENT)

Language Proficiency	Insured	Uninsured	Total
English	87	13	100
No English	68	32	100
All Persons	86	14	100

Based on 3,059 observations (weighted).

* May not total exactly due to rounding.

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB 05.22.86

TABLE 13: PERSONS WITH HEALTH INSURANCE IN BOSTON, BY WORK DISABILITY, 1985
(IN PERCENT)

Health Insurance Status	Work Disability	No Work Disability	Total
Insured	84	86	86
Uninsured	16	14	15
Total	100	100	100

Based on 3,103 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, Conducted by the Center for Survey Research, 1985. K.B.04.02.86

TABLE 14: BOSTON RESIDENTS 18 YEARS AND OLDER WITH HEALTH INSURANCE, BY FULL- AND PART-TIME STUDENT STATUS, 1985
(IN PERCENT)

Health Insurance Status	Full Time	Part Time	Not a Student	Total
Insured	87	81	86	86
Uninsured	13	19	14	14
Total	100	100	100	100

Based on 2,410 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, Conducted by the Center for Survey Research, 1985. K.B.04.02.86

The uncertainty coefficient is an appropriate statistic for the nominal-level variables in this study. The coefficient is the proportion by which uncertainty in the dependent variable is reduced by knowledge of the independent variable. For example, a coefficient of .25 would mean that knowledge of an independent variable, such as age, would reduce uncertainty in the independent variable; health insurance, by 25 percent. The results suggest that industry type and income are the strongest indicators of health insurance status. See Table 15. Age and occupation are the next strongest variables in the health insurance analysis. Neighborhood of residence, race, employment status, poverty, English proficiency and educational attainment are of secondary importance as variables.

At least eight variables are clearly related to health insurance coverage, yet those variables are related to each other. As shown in Table 16, each variable that would be most important in determining incidence of health insurance has significant statistical relationships with nearly all of the other important variables. However, the variables are nominal, that is, neither countable nor rankable and, therefore, not suited for correlation, analysis of variance or regression analysis. Consequently, the influence of two or more variables, together, on health insurance cannot be analyzed or predicted with statistical techniques.

From a practical standpoint, any one cross-tabulation would not be sufficient as a means of identifying persons who are likely to have no health insurance. For example, a health administrator might look at the racial characteristics of a neighborhood population to try to predict the percentage of persons who had health insurance. Yet, age, income, occupation and other variables would be important, also.

TABLE 15: STRENGTH OF STATISTICAL RELATIONSHIPS BETWEEN HEALTH INSURANCE AND INDEPENDENT VARIABLES, FROM THE HOUSEHOLD SURVEY, 1985

Independent Variable	Uncertainty Coefficient (1)
Industry of Work (16 years +)	0.0624
Income (16+)	0.0619
Age (16+)	0.0451
Age	0.0398
Occupation (16+)	0.0381
Neighborhood	0.0225
Race	0.0206
Labor Force Status (16+)	0.0204
Race (16+)	0.0198
Household Poverty	0.0193
English Proficiency	0.0159
Educational Attainment	0.0158
Sex (16+)	0.0049
Sex	0.0033

Medicaid Eligibility

Independent Variable	
Age	0.1132
Neighborhood	0.0601
Race	0.0575
Sex	0.0100

(1) As described in "Statistical Package for the Social Sciences" second edition, p. 226. 1.0 = complete elimination of uncertainty in dependent variable;0.0= no elimination of uncertainty.

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB 05.22.86

TABLE 16: HEALTH INSURANCE AND RELATED VARIABLES: RESULTS OF CHI SQUARE TEST FOR STATISTICALLY SIGNIFICANT RELATIONSHIP, 1985 HOUSEHOLD SURVEY

	Insurance	Income	Labor Force	Occupation	Race	Age	Sex	Neighborhood	Education	Poverty
Insurance	*	+	+	+	+	+	+	+	+	+
Income		*	+	+	+	+	+	+	+	+
Labor Force			*	+	+	+	+	+	+	+
Occupation				*	+	+	+	+	+	+
Race					*	+	-	+	+	+
Age						*	+	+	+	+
Sex							*	-	+	+
Neighborhood								*	+	+
Education									*	+
Poverty										*

+ = variables have significant statistical relationship
- = no significant statistical relationship between variables

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.05.07.86

Types of Health Insurance and Health Providers Used

Boston residents had a variety of health insurance plans in 1985. See Table 17. Excluding persons who were eligible for Medicaid, 52 percent of the respondents listed Blue Cross/Blue Shield as their first plan. Another 20 percent were covered by health maintenance organizations (HMO's). The other 28 percent were spread among Medicare, commercial insurance companies and other health and business organizations.

The type of health insurance coverage varied by neighborhood, as indicated in Table 17. The lowest incidence of Blue Cross/Blue Shield was in Back Bay/Beacon Hill and the South End. In those neighborhoods, HMO's and commercial insurance captured as much health insurance as Blue Cross/Blue Shield. Roxbury and North Dorchester also had below-average coverage by Blue Cross/Blue Shield and above-average coverage by HMO's.

Health insurance coverage by a second plan was uncommon in Boston in 1985. See Table 18. Only 9 percent of the respondents, excluding Medicaid-eligible persons, had second health plans. Incidence of second health plans was well below average in the South End, the Dorchesters and Mattapan.

The type of health provider last used when a doctor was needed suggests several patterns, as shown in Table 19. In Boston, hospital/emergency rooms/clinics were a close second to private doctors as each served as health provider for about one-third of the respondents. The other third of the residents used a neighborhood health center, a health maintenance organization or a university clinic. This pattern varied significantly by neighborhood. Where no neighborhood health center existed, persons tended to use private doctors more readily, except in the Fenway/Kenmore and Allston/Brighton areas where, apparently, students and university employees used university clinics.

TABLE 17: PRIMARY HEALTH INSURANCE COVERAGE FOR BOSTON RESIDENTS BY TYPE OF INSURANCE PLAN BY NEIGHBORHOOD, 1985 (IN PERCENT)

Neighborhood	Medicare	Blue Cross Bl.Shield	Commercial	Health Maint. Organ.	Others	Total
East Boston	12	65	6	5	12	100
Charlestown	3	51	13	18	17	100
South Boston	6	62	9	16	8	100
Central	3	62	4	16	14	100
Back Bay/Beacon Hill	1	39	12	31	17	100
South End	5	41	11	30	14	100
Fenway/Kenmore	3	46	13	15	23	100
Allston/Brighton	3	49	8	20	19	100
Jamaica Plain	8	49	5	29	9	100
Roxbury	5	44	7	32	12	100
North Dorchester	3	44	10	23	20	100
South Dorchester	9	53	7	10	21	100
Mattapan	5	54	9	18	13	100
Roslindale	6	59	4	19	13	100
West Roxbury	2	58	7	27	7	100
Hyde Park	5	57	9	19	9	100
BOSTON	5	52	8	20	14	100

Note: Respondents specified primary and secondary health plans. Medicaid eligible respondents are not included.

Based on 2,321 observations(weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.03.14.86

TABLE 18: SECONDARY HEALTH INSURANCE COVERAGE BY NEIGHBORHOOD, 198
(IN PERCENT)

Neighborhood	Second Plan	No Second Plan	Total
East Boston	9	91	100
Charlestown	9	91	100
South Boston	14	86	100
Central	10	90	100
Back Bay/Beacon Hill	14	86	100
South End	4	96	100
Fenway/Kenmore	13	87	100
Allston/Brighton	17	83	100
Jamaica Plain	6	94	100
Roxbury	7	93	100
North Dorchester	1	99	100
South Dorchester	5	95	100
Mattapan	5	95	100
Roslindale	11	89	100
West Roxbury	8	92	100
Hyde Park	16	84	100
BOSTON	9	91	100

Note: Respondents specified primary and secondary health plans. Medicaid eligible respondents are not included.

Based on 2,321 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB.03.17.86

TABLE 19. HEALTH CARE PROVIDER LAST USED WHEN DOCTOR NEEDED, BY NEIGBORHOOD, 1985
(IN PERCENT)

Neighborhood	Private Doctor	Hospital Emerg.Rm. or Clinic	Neigh. Health Center	Health Maint. Organ.	University Clinic	Other	None	Total
East Boston	38	20	38	1	1	2	1	100
Charlestown	30	25	36	9	1	*		100
South Boston	45	37	12	3	*	1	1	100
Central	49	23	20	5	*	*	3	100
Back Bay/Beacon Hill	56	14	7	19	2	1	2	100
South End	19	36	21	20	1	1	2	100
Fenway/Kenmore	32	33	8	12	13	*	2	100
Allston/Brighton	41	24	13	12	9	1	1	100
Jamaica Plain	26	34	22	16	2	*	1	100
Roxbury	17	39	31	12	*	1	*	100
North Dorchester	16	37	41	6	*	1	*	100
South Dorchester	26	39	25	6	*	1	4	100
Mattapan	21	44	21	11	*	1	2	100
Roslindale	59	26	6	8	*	*	*	100
West Roxbury	58	23	8	12	*	*	*	100
Hyde Park	48	32	8	11	*	1	1	100
BOSTON	35	31	20	10	2	1	1	100

Based on 3,196 observations (weighted).

* Less than 0.5 percent.

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985.

K.B.02.21.86

Hospitals/emergency rooms/clinics were used most frequently in Mattapan (44 percent), Roxbury (39 percent), South Dorchester (39 percent), South Boston (37 percent) and the South End (36 percent). Residents of the South End and Back Bay/Beacon Hill were more likely to use a health maintenance organization than the other neighborhoods. Use of an HMO was particularly uncommon in East Boston, South Boston, the Central area and the Dorchesters.

The Role of the City of Boston's Health Programs

These findings underscore the role of the city-run health and hospital programs and facilities. Boston City Hospital is located in the midst of the neighborhoods where health insurance coverage is lowest. In addition, persons in those areas tend to use hospital emergency rooms to a greater extent than residents of neighborhoods where incomes and health insurance incidence are higher. Further, neighborhood health centers appear to be popular health care providers for residents in those neighborhoods where health insurance coverage is relatively low and incomes are below average.

Medicaid Eligibility

The 1985 Household Survey asked respondents if they were eligible to have medical costs covered by the Medicaid program, with reference to the gray eligibility card. The responses by neighborhood, in Table 20, show a prominent pattern. In Boston as a whole, 15 percent of all persons were eligible for coverage under Medicaid. However, the seven most central or southern-most neighborhoods had eight percent coverage or less: Charlestown, Central, Back Bay/Beacon Hill, Fenway/Kenmore, Allston/Brighton, West Roxbury and Hyde Park. In seven other neighborhoods, one of every five persons was covered by Medicaid: East Boston, South End, Jamaica Plain, Roxbury, the

TABLE 20: ELIGIBILITY FOR MEDICAID
BOSTON RESIDENTS, BY NEIGHBORHOOD, 1985
(IN PERCENT)

Neighborhood	Yes	No	Total
East Boston	25	75	100
Charlestown	7	93	100
South Boston	18	82	100
Central	5	95	100
Back Bay/Beacon Hill	4	96	100
South End	24	76	100
Fenway/Kenmore	5	95	100
Allston/Brighton	8	92	100
Jamaica Plain	22	78	100
Roxbury	26	74	100
North Dorchester	22	78	100
South Dorchester	19	81	100
Mattapan	19	81	100
Roslindale	12	88	100
West Roxbury	6	94	100
Hyde Park	8	92	100
BOSTON	15	85	100

Based on 3,196 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.02.21.86

Dorchesters and Mattapan. Differences in income among the neighborhoods are reflected in this pattern since Medicaid eligibility is determined primarily by lack of income. Medicaid coverage varied notably with age and race, as shown in Tables 21 and 22, respectively. Children under 18 years of age were the most likely to be covered by Medicaid, followed by persons over 65 years of age. The proportions of covered persons by race were 32 percent for Hispanics, 25 percent for blacks, 19 percent for Asians, but only 9 percent for whites. Again, this variation largely reflects the uneven distribution of income among Boston's residents.

Medicaid coverage by sex indicates that 19 percent of Boston's females were covered compared to 12 percent of all males. See Table 23. That difference is consistent with the finding that 11 percent of Boston's households are headed by females, most of which have relatively low income. Other factors in differences Medicaid coverage by sex include lower labor force participation among women.

Statistical results of cross-tabulations related to Medicaid eligibility, indicate that in addition to income, age, neighborhood and race/ethnicity are are associated with coverage. See Table 15.

TABLE 21: PERSONS IN BOSTON WHO ARE ELIGIBLE FOR MEDICAID BY AGE, 1985 (IN PERCENT)

Age	Medicaid	No Medicaid
0-4	29	71
5-14	24	76
15-18	24	76
19-24	7	93
25-44	7	93
45-54	14	86
55-64	13	87
65 +	37	63
Total	15	85

Based on 3,154 observations (weighted).

* May not total exactly due to rounding.

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. JPB 05.22.86

TABLE 22: PERSONS IN BOSTON WITH MEDICAID, BY RACE, 1985

(IN PERCENT)

Medicaid Eligibility	Black	Asian	Hispanic	White	Other	Total
Medicaid	25	19	32	9	32	15
No Medicaid	75	82	68	91	69	85
Total	100	100	100	100	100	100

Based on 3,130 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.04.02.86

TABLE 23: BOSTON RESIDENTS WITH MEDICAID, BY SEX, 1985

(IN PERCENT)

Medicaid Eligibility	Male	Female	Total
Medicaid	12	19	15
No Medicaid	88	82	85
Total	100	100	100

Based on 3,160 observations (weighted).

Source: Boston Redevelopment Authority and Neighborhood Development and Employment Agency Household Survey, conducted by the Center for Survey Research, 1985. K.B.04.02.86

APPENDIX 1

METHODOLOGY, SAMPLING PROCEDURE AND STATISTICAL ERROR OF THE BOSTON HOUSEHOLD SURVEY

The Boston Household Survey was conducted by the Center for Survey Research of the University of Massachusetts for the Boston Redevelopment Authority during the late winter and spring of 1985. It purpose was to provide up-to- date, specific and accurate information about persons living in households in the City of Boston and its neighborhoods. Planners and program administrators within city government, executives and decision makers in both the public and private sectors, and researchers have all needed updated information. The main source of information on the characteristics of Boston households has been the decennial U.S. censuses. Therefore, the survey results will provide much needed information in the interim as well as additional information not available from the U.S. Census.

The advantage of a sample survey is that timely information can be gathered quickly and relatively inexpensively. However, because the information is received from a sample of Boston's population rather than the entire population, the results are subject to statistical error. Statistical error is a measure of the degree of uncertainty or, obversely, the level of confidence that should be associated with the survey results. Throughout this report error will mean statistical error, as opposed to mistakes.

This report provides a brief description of the survey methodology. It indicates how the sample was chosen, some of the measures used to ensure a high response rate, and the resulting sample sizes. It also indicates some of the limitations of this survey, and surveys in general.

The Boston Household Survey was designed and conducted so as to obtain information that is representative, relevant, accurate, and reliable as well as timely. The questionnaire was carefully worded and standardized to ensure that each interviewer asked exactly the same questions of each respondent.

The households interviewed were chosed by a stratified two-stage cluster sampling process.[1] In the first stage, the nearly quarter of a million housing units (and all the land area) were assigned to one of three groups: BHA public housing, major new construction (50 or more units) built since the 1980 Census, and all of the remaining housing and land area. These groups were further divided into "sampling units" or "blocks" with a minimum of 25 units in each. Sampling proceeded by choosing nearly 300 of these sampling units and an average of 6.7 housing units, chosen systematically, in each which yielded clusters of just under 5 responding units on average.

The second stage called for giving every housing unit within the city limits of Boston a one in 120 chance of being selected in the sample. This was carefully worked out so that, in fact, the joint probability of selecting a block times the probability of selecting a housing unit from that block was 1 in 120.

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1. More detailed information about the sampling process can be obtained from the Center for Survey Research.

The second stage called for giving every housing unit within the city limits of Boston a one in 120 chance of being selected in the sample. This was carefully worked out so that, in fact, the joint probability of selecting a block times the probability of selecting a housing unit from that block was 1 in 120.

A critical goal of the study was to produce estimates for each of 16 planning districts or areas used by the Boston Redevelopment Authority and 18 areas used by NDEA. Because of this goal, the initial selection of blocks was stratified by Neighborhood Statistical Area (NSA), a small geographic unit out of which both sets of planning areas can be formed. In this way, it was ensured that the portion of the total sample that came from each NSA would be in the correct proportion to the city total and not subject to normal sampling variability. This feature of the sampling design reduces the sampling error associated with city-wide estimates.

When a probability of 1 in 120 was applied across each of the planning districts, it was found that several areas would have too few interviews for reliable descriptions because of their small population size. Therefore, households in Charlestown, Franklin Field, and Mission Hill were selected at two times the rate of households in the rest of the city. To help defray costs, households in Allston-Brighton (a comparatively large area) were sampled at 1/2 the rate of the rest of the city. The result of the decision was to strengthen our ability to describe the population in all neighborhood areas. To obtain the overall figures for the city and for areas that cut across planning areas, the sample numbers for each of these four neighborhoods were subsequently weighted by 2 or 1/2 appropriate weights to compensate for the differential probability of selection that reflect the actual proportion of City housing units in those neighborhoods.

The initial selection process produced a list of some 2,064 addresses whose occupants were to be interviewed. No substitutions for any of the selected households were allowed. Of the 2,064 addresses screened, 127 were vacant and 102 were group quarters or nonresidential units. They were not included in the eligible sample of 1,835 occupied units. In these 1,835 occupied housing units were 1,835 families or individual persons and an additional 295 unrelated persons who may have been roommates, lodgers, boarders, etc. Both the head of family unit (family or single person) and any unrelated persons were interviewed. Of the 2,130 potential interviews, 1,625 were completed, 1,491 with household heads and 224 with unrelated persons. This yielded a 76.3% response rate citywide.

Every effort was made to obtain an in-house interview from households chosen for the sample including an advance letter, six personal on-site calls by an interviewer at different times of day, and telephone interview attempts thereafter. The household response rate for neighborhoods varied between 66% and 86%. The sample size goal to yield reliable neighborhood results was 70 completed interviews in each neighborhood. Four neighborhoods had fewer than seventy interviews: Charlestown, North Dorchester, and Roslindale. (See Table 1.)

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2. Overall sampling rate for households is the probability of the sampling unit being chosen times the probability of the households within the sampling unit being picked.

TABLE 1. SAMPLE NUMBERS OF ELIGIBLE UNITS AND COMPLETE INTERVIEW WITH RESPONSE RATES BY NEIGHBORHOOD (BRA Planning District)

Planning District	Occupied Housing Units Plus Unrelated Individuals	HH and U.I. Completed Interviews	Response Rate	Persons Reported Interviewed
East Boston	121	88	73%	196
Charlestown	96	68	71	139
South Boston	116	78	67	153
Central	111	82	74	114
Back Bay/Beacon Hill	138	102	74	135
South End	93	74	80	121
Fenway/Kenmore	133	112	84	175
Allston/Brighton	171	143	81	204
Jamaica Plain/Parker Hill	246	188	76	368
Roxbury	198	155	78	377
North Dorchester	85	69	81	177
South Dorchester	174	131	75	353
Mattapan	189	148	78	444
Roslindale	103	68	66	172
West Roxbury	110	76	69	192
Hyde Park	88	76	86	214
	2,130	1,625		3,534

Source: Floyd J. Fowler, Jr., "Final Report: Procedures for Survey of Boston's Neighborhoods", Center for Survey Research, University of Massachusetts - Boston, August 1985; Survey results.

While this survey was carried out in a careful scientific manner, the user should be aware that there is error inherent in any sample survey results. Therefore, some cautions are necessary in the use and interpretation of these data.

The user must recognize that this is a sample of Boston's housing units and their associated households. As such, it does not include persons in dormitories, jails, convents, nursing homes, and other "group quarters" as well as those with no permanent home. Although the impact of this bias may be small, it is well to bear in mind that this is not a sample of the city's entire population, both for the representativeness of the results and their comparability with other data sources, such as the U.S. Census.

The largest source of error is nonresponse, cited above. Fortunately what information is available about nonrespondents indicates that they do not differ systematically and significantly from respondents except that they are more likely to live alone, to be white, to be under 65 years old, and to have no children living with them. However, we cannot really know in what way the absence of 24% of Boston's family units from our sample biases our results.

Another source of error is sampling error or variability which is due solely to chance. It is the error associated with taking a sample rather than the entire population as the study group. It is akin to the notion of the variability in the number of heads and tails turned up during 100 tosses of a coin. The amount of error associated with a sample percentage depends on both the size of the reported percent and the sample size on which the percent is based. Table 2 indicates the appropriate error for each sample value. The error, in general, declines as the sample values are further from 50% and the sample size increases. The user should not assume that the sample value is exactly the value for the population. The correct interpretation of sample results and the associated error is that the true value for the population lies somewhere within the range of sampling error around the sample value.

For instance, sample survey results indicate that 31 percent of the families living in the Back Bay/Central/South End neighborhoods earn $50,000 or more a year. Because this proportion is based on a sample, it is uncertain whether or not the actual value is 31 percent. However, we can be almost certain that the true value lies close to this percentage. The calculation of sampling errors in Table 2 helps us to know how close. The 31 percent figure comes from the fraction 19/62. Therefore, we look in Table 2 for the row in which sample size is about 50 and the column in which the reported percent is about 20 or 80 percent. This yields a sample error of 12 percent. From this information, we know that the actual percentage earning $50,000 or more a year among families in these neighborhoods lies between 19 and 43 percent (31% ± 12%). Again, we might want to know the associated sampling error for all families in Boston earning $50,000 or more, 10 percent, which is based on a size of 634 families citywide. Table 2 tells us that for a reported percentage of 10 percent and a sample size of 634, the sampling error is 3 percent. So the value for families is expected to be no more than 3 percent from the sample value of 10 percent, or between 7 and 13 percent.

This statement about error is not intended to discourage use of survey information. Instead, use of these materials is encouraged; the data included are the most current available and, in some cases, are not obtainable from any other reliable source.

TABLE 2. SAMPLING ERRORS BY SAMPLE SIZE AND APPROXIMATE REPORTED PERCENTAGE FOR THE BOSTON STUDY

Sample Size	5 or 95%	10 or 90%	20 or 80%	50%
50	-	-	12	16
75	-	7	10	13
100	-	7	9	11
150	4	5	7	8
175	4	5	7	8
200	3	5	6	8
250	3	4	6	7
300	3	4	5	6
400	2	3	4	6
500	2	3	4	5
750	2	3	4	5

Chances are 95 in 100 that the central value lies within the reported survey value, plus or minus the number of percentage points shown in this table. Errors included here assume average net design effect for clustering and stratification is 1.2.

Source: Floyd J. Fowler, Jr., "Final Report: Procedures for Survey of Boston's Neighborhoods", "Center for Survey Research, University of Massachusetts-Boston, August, 1985.

Appendix 2

DEFINITION OF TERMS IN THIS REPORT

Health Insurance Coverage--For persons in households, having private health insurance or public health assistance (Medicare or Medicaid).

Private (Commercial) Health Insurance--All or part of a subscriber's medical expenses are covered by a private party. Blue Cross/Blue Shield is the most common private health insurer. Others in Boston include Medex, Aetna, Mutual of Omaha, Metropolitan, John Hancock, Connecticut General, Travelers, Allstate, Prudential, work insurance, union insurance, college insurance and health maintenance organizations such as Harvard Community Health Plan, Tufts, and Bay State.

Health Maintenance Organizations (HMO's)--Organizations that provide for members' health care needs by contracting with physicians, nurses, specialists, pharmacies and other health care providers. Members use services and facilities affiliated with the HMO.

Public Health Programs--Medicare and Medicaid.

Medicare--The federal government covers part of an eligible person's medical expenses with payment going to the health care provider. All persons 65 years of age or older are eligible for Medicare. Medex is a private supplement to Medicare.

Medicaid--The federal government pays health care providers for all or part of an eligible person's medical expenses. Eligibility is based on household income. Households with income above the poverty level would not be eligible; most households in poverty would meet eligibility requirements. Elderly persons could be eligible for both Medicare and Medicaid.

Neighborhood Health Center--One of 24 centers in 12 of Boston's neighborhoods. Eighteen of the centers are free-standing and affiliated with Boston City Hospital or other local institutions. Six centers are licensed as hospital outpatient departments. Services at neighborhood health centers include pediatrics, adult primary care, mental health and social service, dental and other clinical services. See Dale Young, A Promise Kept, City of Boston, The Trustees of Health and Hospitals, 1982.